Investing in the Future:

Six Principles for Promoting the Nutritional Status of Adolescent Girls in Developing Countries

INTERNATIONAL CENTER FOR RESEARCH ON WOMEN

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Six Principles for Promoting the Nutritional Status of Adolescent Girls in Developing Countries

by

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Introduction

WHY FOCUS ON ADOLESCENCE?

Adolescence is a period of great opportunity for directing youthful energy and idealism, and preparing girls and boys to become productive, confident adults It represents a unique chance for poor youths to develop important health behaviors bolster income-earning potential and avoid a myriad of costly physical and social problems Improvements made today in health services nutrition education and training for adolescents should be considered strategic investments in the future and are vitally important for sustainable development (Hechinger 1992)

There are currently more than 1 billion adolescents worldwide representing about one-fifth of the global population A remarkable 84 percent of this young population 10 to 19 years of age (WHO 1986) resides in the developing world In some countries adolescents comprise nearly one out of every four persons (UN 1990)

Among these adolescents in developing countries many are poor For them adolescence is often a precarious juncture between an impoverished childhood and a demanding future They face problems of inadequate education and training high unemployment rates youth violence, and a rising incidence of HIV infection - all of which have implications for their economic, physical and psychological well-being in adulthood

WHY ADOLESCENT GIRLS?

In most countries adolescent girls face more limited access to education and training than do boys, as well as more restricted economic opportunities In addition they are at greater risk of undernutrition because of heavy workloads and the demands of pregnancy Numerous studies have shown that girls undertake heavy household work responsibilities early in their lives Without increased food intake the energy expenditure required by girls physical workloads can compromise their nutritional status and growth Moreover, the majority of women begin bearing children either during adolescence or shortly thereafter The reproductive cycles of pregnancy childbirth, and lactation are nutritionally demanding and adolescent mothers face these demands while they themselves are still growing and developing (Tanner 1990) The result is often compromised stature or incomplete pelvic growth with consequent increased risk of maternal death from obstructed labor In some settings gender discrimination in the distribution of food within the household may compound these problems

Maternal and child health (MCH) programs are among the limited number of interventions aimed at improving nutrition for women They are an important means of reducing nutritional losses during pregnancy through food and iron supplementation They cannot however provide enough supplementation to overcome pre-existing deficits in women s nutritional status Attention to improving the nutritional status of adolescent girls before the reproductive years begin can ensure adequate pre-pregnancy weight which is closely associated with reduced infant mortality and adequate physical development which can reduce maternal mortality due to obstructed labor In addition a focus on adolescent nutrition will help girls to more fully realize educational opportunities and prepare them for future work demands

TAKING A BROADER VIEW OF NUTRITION

Nutritional status can be viewed as a balance between intake (food vitamins) and expenditure (physical work pregnancy infection) (see Diagram) Nutrition interventions typically target food intake to improve nutritional

status without addressing energy expenditures Where energy and iron losses are high, however addressing both intake and expenditure can be more effective In the case of adolescent girls nutrition, this implies a broad approach to improving nutritional status through interventions that are guided by the six principles laid out in this document

- improve adolescents food intake,
- keep girls in school to promote nutritional status,
- postpone first births to enhance nutritional status,
- reduce girls workloads and improve work conditions
- improve adolescents health for better nutritional status and
- enhance girls self-esteem to encourage nutritional status

While all of the principles are important for improving girls nutritional status they are listed in order of their effectiveness in improving or maintaining individual nutritional status, and the proportion of the female adolescent population likely to be affected

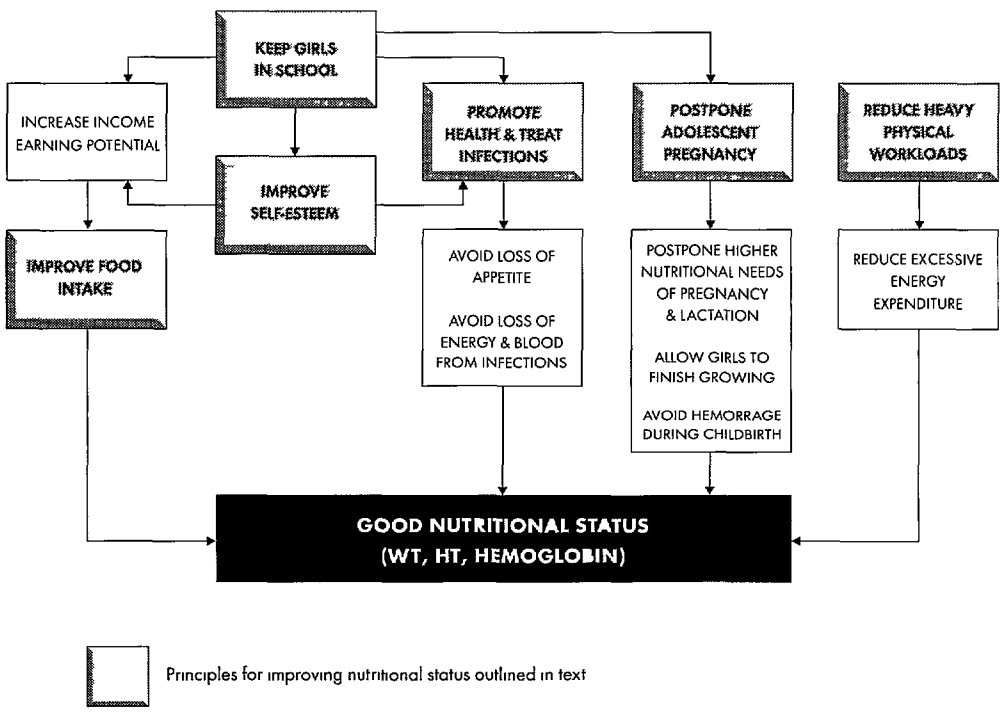
It should also be noted here that adolescent nutritional status is influenced by early childhood nutrition The high growth potential from birth to five years makes this a very effective time to promote adequate food intake and reduce morbidity in order to prevent undernutrition If interventions during early childhood, such as child survival programs and food supplementation are successful good nutritional status during adolescence will be a long-term benefit

ABOUT THIS DOCUMENT

This document has been prepared under the ICRW Nutrition of Adolescent Girls Research Program which was funded by the Office of Nutrition U S Agency for International Development, and under which 11 research projects were carried out in nine developing countries The information presented here draws on the findings of these projects an ICRW survey of more than 100 programs working with adolescents in Africa Asia Latin America and the Caribbean regarding the scope and design of each program and services being provided (Peplinsky 1994) and the existing literature on nutrition and adolescence

The paper consists of six sections that discuss the guiding principles and suggest strategies for their implementation a concluding section that summarizes the principles and strategies and presents additional cross-cutting strategies for working with adolescents a list of selected organizations working with adolescents in developing countries and a reference list of publications that offer further information

Diagram of Relationships Between the Six Principles and Adolescent Nutritional Status



Principle 1: Improve Adolescents' Food Intake

Increasing the quality and quantity of food intake are the most commonly adopted strategies for improving nutritional status, regardless of the age group being targeted Food quality and quantity correspond to the two most frequent nutritional deficiencies thought to occur among adolescents inadequate energy (not enough food quantity) and low iron status (poor food quality) Having enough food to eat is a basic element of nutritional status Access to food may be inadequate due to poverty, seasonal food supplies or inequitable intrahousehold allocation patterns Food is particularly important during adolescence because it fuels a growth spurt during which 15 to 25 percent of adult height is achieved and 45 percent of skeletal development occurs (Rees and Trahms 1989)

Credit United Nations/Photo by J K Isaac 151 580

Food quality is also important to nutritional status Diets with adequate energy can be deficient in important vitamins and minerals necessary for growth and continued health (Brabin and Brabin 1992) High rates of iron deficiency are common among adolescents in developing countries Additionally iodine deficiency still exists in many areas where national iodine control programs have not yet been expanded

STRATEGIES

▶ Increase household purchasing power

Poverty is a common reason for inadequate food intake by household members including adolescents Economic development policies that focus on poverty alleviation and growth with equity can thus contribute to improving adolescent girls nutrition as can community-based income generation projects and assistance to microenterprise or agricultural production

▶ Educate adolescents about nutrition

Nutrition education for adolescents is necessary to improve their food choices Adolescents lack not only knowledge about advantages and disadvantages of certain foods, but an understanding of the impact of their dietary habits for their current and especially future health and well-being Using popular media techniques and incorporating nutrition messages into health education programs are important first steps toward achieving improved food intake among youths

▶ Offer meals at schools or worksites

In some cases workload, employment or even school attendance are obstacles to adequate food intake Providing low-cost or free meals at schools or worksites helps compensate for this inadequacy (Availability of food at school carries the added benefit of encouraging parents to keep their children in school) Promoting the operation of food vendors near schools or worksites can also be effective in enticing students or young workers to spend their pocket money on food

▶ Offer iron fortification or supplementation

Adolescents are vulnerable to anemia -- girls because of menarche and possible early childbearing and boys because of rapid muscle development The preferred way to reduce anemia is to promote consumption of iron-rich food especially meat and green leafy vegetables Where inadequate iron is still a chronic problem iron fortification and supplementation programs help reduce the prevalence of anemia One possible setting for iron supplementation is school In addition a public education campaign is recommended to inform people about the high prevalence of anemia and its deleterious effects

▶ Discourage gender differences in food intake

Through information and education campaigns, young girls and their parents should be discouraged from limiting girls food intake to ensure that they maintain slim figures or because men and boys are believed to work harder and require more food Adolescent girls may in fact, require more food to prepare for the demands of future pregnancies

Principle 2: Keep Girls in School to Promote Nutritional Status

Education positively influences girls nutritional status through a variety of paths (see Diagram) First girls who stay in school longer are likely to increase their income earning potential which allows them to improve their food intake and hence their nutritional status

Second girls who stay in school longer tend to have their first births at a later age This is due to several factors For one, parents may choose to postpone their daughter s marriage until she has finished school Additionally school-attending girls may be taught family life education become more aware of family planning options or have access to the services of a school-based health clinic Postponing first births as is described in the next section, is a critical means to improving nutritional status The heavy nutritional demands of pregnancy childbirth and lactation when they occur while girls are still growing jeopardize a girl s own growth and development which can have effects on her health and nutritional status well into adulthood

Third, girls who stay in school longer have more opportunities to learn how to promote their own health and are more likely to seek treatment for illnesses As with family planning options health promotion can be taught at school or girls may have access to health services at or near school Investments made to girls education also have positive effects on their use of health services and have been shown to decrease the likelihood of births to adolescents (Senderowitz forthcoming) Improving adolescent health is a subsequent principle for improving nutritional status

Finally girls who stay in school longer seem to have higher self-esteem and self-confidence and feel they have more options for their futures than less educated girls School attendance enables young girls to develop social contacts outside of their homes which contributes to their self-concept and aspirations for the future (Klineberg 1973 Callaway 1986) Many benefits accrue to higher self-esteem Girls may make more nutritious food choices or refuse to accept workloads that are too heavy hence improving their nutritional status

Despite support from international agencies (Summers 1992 UNICEF 1992), extensive research and program activity encouraging female education in developing countries a gender gap in educational enrollment and attainment persists (see Graph 1) Narrowing this gap is an important step toward improving girls nutritional status Some gains have been made in girls enrollment in primary school but their secondary school enrollment is still low in many developing countries

Overcoming Barriers to Girls Education

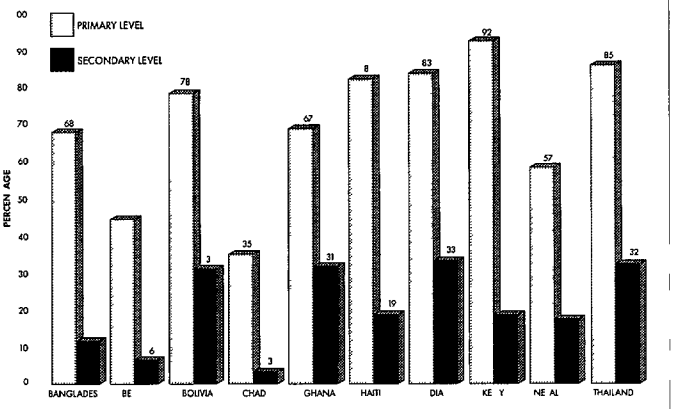
While less than ten years old the Bangladesh Rural Advancement Committee s (BRAC) Non Formal Primary Education program (NFPE) is one of the most successful programs for promoting girls education Under the NFPE Program BRAC established Kishor Kishori schools designed for 11 to 16 year old children who have dropped out of primary school and who are unlikely to return to continue their education There are 33 children in each school more than 70 percent of them are girls The success of these schools and their high retention rates have been attributed to BRAC s understanding of the demands placed on girls and the obstacles to their school attendance Poverty is recognized by BRAC as the major reason children drop out of school Consequently the NFPE schools provide the necessary books and supplies at no cost and vary school hours so that girls household and agricultural obligations are not compromised and do not conflict with their school attendance Additionally by locating schools close to home the NFPE schools place far less strain on household income than the formal school system of Bangladesh BRAC also uses a high percentage of women teachers (more than 60 percent) which helps to allay parents fears and who provide positive role models for girls

The curriculum used by BRAC is one that parallels that of the formal school system but which focuses on an activity based student centered approach designed to be more relevant to the lives of poor girls BRAC encourages participation of girls by enlisting parental support While parents make no monetary contributions to the schools they are expected to attend monthly meetings in addition to sending their children to school every day Meetings with parents are designed not only to reinforce the importance of school attendance but also to discuss topics such as maternal and child health and social issues including early marriage and dowry

From 1985 to 1993 BRAC opened 7 688 Kishor Kishori schools for adolescent girls Plans to expand the NFPE program could result in more than 50 000 of these schools throughout the country by 1995 BRAC s responsiveness to the needs and concerns of both parents and children has been critical to the success of the NFPE schools and has won educational attainment for thousands of young girls throughout Bangladesh

Source ABEL 1993 *Primary Education for All Learning from the BRAC Experience* Washington DC AED

Graph 1 Gross Female Primary & Secondary School Enrollment Rates[1] Selected Countries



Source Population Action International 1994 *Closing the Gender Gap* Washington DC

[1] The number of girls enrolled in primary/secondary chool as a percent of the primary/secondary hool age female population

STRATEGIES

▶ Ensure girls' safety and privacy at school

Many of the prevailing barriers to girls education are rooted in cultural practices which view girls as temporary household members until marriage, and which echo concerns for girls safety and the protection of their social reputations In order to accommodate these anxieties programs designed to promote girls education must devise appropriate facilities which offer both privacy and protection from both sexual harassment and abuse

▶ Establish schools close to home

Locating schools close to home encourages attendance by decreasing the perceived risks to a girl s safety as well as by reducing her time away from household tasks or child care responsibilities (see box) As an alternative the creation of individualized courses of study for at-home education has been successfully used to address these concerns (CEDPA 1993)

▶ Increase the proportion of female teachers

Recruiting female teachers is yet another means to encourage school attendance by girls Female teachers help to reduce parents concerns for girls safety away from home In addition they provide girls with positive role models For these and other reasons the presence of female teachers has been correlated with greater school enrollment and retention among girls (UNICEF 1992) Providing incentives for female teachers, such as housing close to schools or flexible schedules has been very productive in the past Training re-training and regular support for female teachers is also necessary

▶ Make school hours more flexible

Girls school attendance is obstructed not only by sociocultural factors but by economic realities Many girls in lower income households have heavy household workloads, chores and child care responsibilities As a result of these tasks little time remains for education especially during the busiest hours of the day Program implementors need to be sensitive to girls household chores and devise methods to incorporate these demands on girls time in designing school schedules (see box) Offering flexible or alternative school hours is an important step in addressing these constraints

▶ Offer an alternative to formal education

In a number of settings a combination of sociocultural practices and poorly designed formal education systems create an atmosphere that deters girls from attending school By providing alternatives to formal education which integrate curricula relevant to girls lives greater incentives for attendance can be achieved The combination of vocational skills training with literacy or numeracy classes also works to generate interest in formal education among girls and their parents

▶ Integrate food supplementation into school systems

Finally in an insightful effort to address immediate nutrition and educational concerns a number of programs have successfully combined food supplementation with school attendance (Moore 1993) Providing dietary supplements at school also provides incentive for attendance while addressing the caloric needs of early adolescents in order to enhance their growth and adult stature

Principle 3: Postpone First Births to Enhance Nutritional Status

There are three fundamental ways in which postponing pregnancies from the adolescent to the adult years promotes good nutritional status among adolescent girls (see Diagram) Each reduces nutritional losses associated with pregnancy, childbirth, and lactation While postponing pregnancy will not improve the nutritional status of a non-pregnant girl *per se*, it may prevent its deterioration

First, postponing the reproductive cycle of pregnancy childbirth, and lactation delays the onset of increased nutritional requirements needed to meet the energy and nutrient demands of a developing fetus and later a growing infant The energy cost of pregnancy is estimated to be 300 kilocalories per day and lactation to be 500 kilocalories per day during the first six months If these extra requirements are not met by increased food intake, then energy is mobilized from existing fat stores and a woman loses weight

Second postponing childbirth allows a girl to complete her own physical growth Final height and bone growth is often not complete until four years after menarche Adolescents undergo a period of accelerated physical growth, second only to the 0-5 year old period Pregnancy can slow this growth spurt compromising final adult height The reasons for this are not fully understood but the adolescent girl may not be able to consume enough food to meet the extra nutritional requirements of both her own rapid growth and of her growing fetus The result can be a competition between mother and fetus for nutrients in which the fetus has the physiological advantage (Scholl and Hediger 1993)

Third when pregnancy is postponed so are the medical emergencies that may occur at the end of pregnancy or during childbirth The emergency with the most profound nutritional impact is hemorrhage Massive blood loss due to hemorrhage, if survived, can lead to anemia which can require an extensive recovery period

While family planning and reproductive health services for women in developing countries have expanded dramatically in recent years few are reaching adolescents In many areas adolescent fertility rates have either remained high or have increased while overall fertility rates have begun to fall The risks of pregnancy and childbirth are more threatening when the mother is in her adolescent years as indicated by higher infant mortality rates (see Graph 2) The maternal mortality rate for adolescent girls ages 15-19 is also greater than for women ages 20-24 For example in Ethiopia it is three times greater - 1 270 per 100 000 live births for women 15 19 versus 436 for women 20-24 (Blum 1991) Adolescent girls are also at greater risk than adult women for many additional pregnancy and delivery complications (Miller 1993 Koetsawang 1990, Senanayake 1990)

Multifaceted Communication Strategies for Health

Births to girls between the ages of 15 and 19 account for more than 15 percent of all births in Zimbabwe These alarming statistics provided the impetus for the Zimbabwe Family Plan ning Council s reproductive health activities for adolescents Under its Youth Advisory Services Unit the Zimbabwe National Family Planning Council used focus group discussions to gather information on the needs and concerns of adolescents In order to provide educational materials requested by adoles cents the Council used the various forms of media accepted by them including booklets flip charts pamphlets and drama The materials messages were designed to encourage fewer unwanted pregnancies abortions and sexually transmitted diseases and to demonstrate the adverse consequences of relationships with sugar daddies One such publication created by the Council is a teaching manual on Family Life and Human Sexuality for use by workers and teachers in contact with adolescents In addition songs have been composed in local languages and sets of slides and videos have been developed for use with rural village groups Training work shops are conducted by the Council to show workers how best to use the materials

The Youth Advisory Services Unit also conducts regular radio and television programs which deal with the complexities of adolescence Drama groups organized by the Council are used to convey health messages to audiences both in and out of school

By making use of the many means of communication avail able to them the Council has had remarkable success in conveying reproductive health information to teens throughout the country In addition to developing educational materials the Council has established a number of youth centers both to serve as recreational facilities for adolescents and to meet their contraceptive and reproductive health needs

Source WHO/IYF 1992 *Approaches to Adolescent Health and Development Principles for Success* Geneva

STRATEGIES

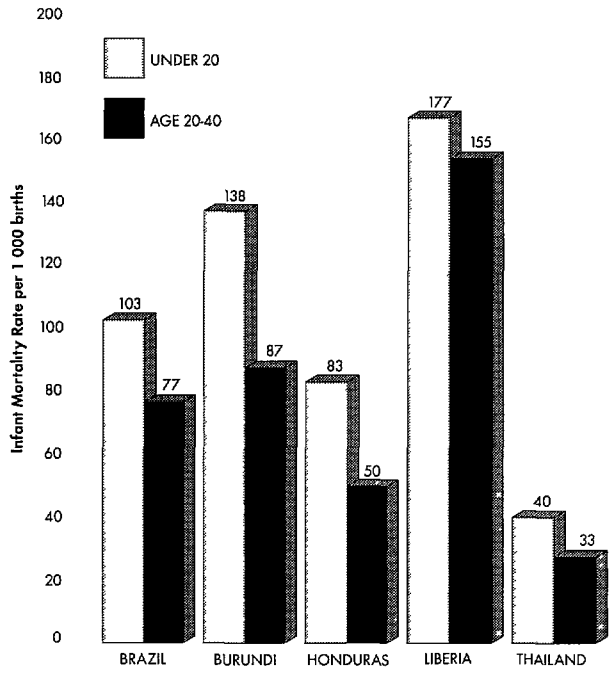
▶ Postpone age at marriage

Where pregnancies occur after marriage but girls are married young postponing marriage can serve to delay first births When parents decide to keep girls in school, they effectively postpone their marriages There are also other creative methods for achieving this goal For example, one program in India recognized that girls were married later if their older brothers postponed their own marriages (Rao 1993) and so promoted continued education and later marriage for the brothers

▶ Offer appropriate family planning and reproductive health services for adolescents

Providing family planning services to adolescents will delay childbearing However adolescents cannot easily be integrated into existing family planning programs designed to target adults (see box) Adolescents may fear repercussions for seeking contraceptives which is an admission of sexual activity Whether creating separate facilities for adolescents or integrating them into existing programs adolescents must receive privacy and confidentiality Service providers should also be trained in building rapport with adolescents

Graph 2 Infant Mortality Rate by Age of Mother Selected Countries



Source United Nations 1989 *Adolescent Reproductive Behavior Evidence from Developing Countries* Vol II New York

▶ Provide family life education and life options

Adolescents need education about sexuality reproductive health and ideas for creating options for their future The World Health Organization estimates that 75 percent of adolescents under 15 years of age and 50 percent of those over the age of 15 have no access to information and education programs on reproductive health (WHO 1986) To overcome social resistance to adolescent sexuality programs should educate parents and teachers about the risks involved in adolescent pregnancy and the spread of STDs For in-school adolescents family life education should be added to their general curriculum and both educators and peers can be trained to provide information and counseling Adolescents who do not attend school are harder to reach Peer counselors and family life education could be added to activities in which these adolescents participate

▶ Increase educational attainment for girls

Education is one of the most critical links to delaying childbirth Strategies for keeping girls in school such as locating schools close to home offering flexible hours and recruiting female teachers (Herz 1991), are suggested in the previous section

Principle 4: Reduce Girls' Workloads and Improve Work Conditions

Many adolescent girls have heavy work burdens, and the energy expenditure associated with their work can compromise their nutritional status (see Diagram) unless adequately compensated by additional food Girls in general have greater and earlier responsibilities than boys in the home and they spend significantly more hours in productive household labor Time budget studies conducted in rural areas have shown that young girls spend significant amounts of time in child care and household tasks, including strenuous activities such as the collection of fuelwood and water In rural Indonesia for example, girls aged 12-14 spend an average of 8 7 hours per day working, while boys of the same age spend only 4 7 hours per day (White 1975) Reducing girls workloads could help limit their nutritional losses

A high proportion of adolescent girls (and boys) also work outside the household - over 50 percent of girls in countries such as Ethiopia, Thailand and Bangladesh (see Graph 3) Their work is not well documented, but some sectors in which the demand for child labor is high are notorious for long working hours, poor conditions and low pay Such work threatens not only girls nutritional status but also their educational attainment which already lags behind that of boys in many countries When adolescent employment is inevitable however, better employment opportunities could contribute to improvements in girls nutritional status both directly and indirectly while minimizing conflicts with school attendance Shorter work shifts would directly reduce energy expenditure and nutritional losses and would free time for schooling and the preparation of lessons Better pay could lead to greater food availability by increasing household income Moreover adolescent employment could provide an opportunity for on-the-job meals or supplementation programs with concomitant productivity gains for employers and better health for young workers

Breaking Occupational Stereotypes

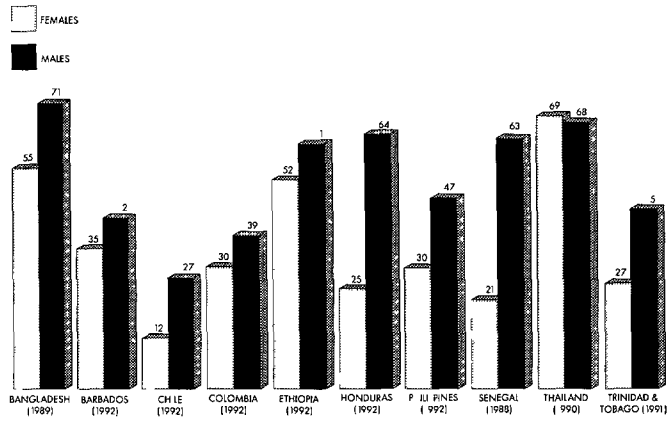
Improving adolescents opportunities for the future has been SERVOL s goal for more than 20 years Through its innovative approach to adolescent development SERVOL is providing youths in Trinidad with the skills necessary to obtain gainful employment SERVOL s program design encourages the erosion of gender based stereotypes regarding career choices and assists young women in obtaining employment in non traditional occupations

SERVOL has created 40 youth centers throughout Trinidad At each SERVOL center the focus is on employment in the informal sector which is described as more efficient and productive in provid ing employment for people To prepare youths for employment SERVOL offers a four stage plan for adolescent socioeconomic development The first stage focuses on human development' and is designed to improve self esteem and to foster positive attitudes among discouraged youths In the second stage adolescents make a choice about the type of occupation they wish to pursue By strongly encouraging non traditional training such as plumbing and masonry for young women SERVOL hopes to refute the myth that women are meant to stay at home Through job training and placement — the third stage — adolescents obtain gainful employment and are taught money management skills For young girls the training and assis tance SERVOL provides is invaluable as they are imbued with the skills necessary to move out of the more traditional low wage low security occupations currently dominated by women In the fourth stage SERVOL assists young microentrepreneurs by offering loans to help cover start up costs

SERVOL aims to make adolescents productive members of soci ety both economically and socially through attitudinal change and employment training By providing teens with the necessary skills SERVOL improves their chances of obtaining gainful employment SERVOL s special commitment to breaking down gender stereotypes is particularly valuable to young women and helps them open doors to higher income occupations

Source SERVOL *Mission Statement* No date Port of Spain Trinidad SERVOL, Ltd

Graph 3 Economically Active[1] Adolescents by Sex Most Recent Year Available Selected Countries



Source ILO 1993 *Yearbook of Labour Statistics* 52nd Issue Geneva

[1]proportion of adolescents who provided labor for the production of goods and services for any portion of the year

STRATEGIES

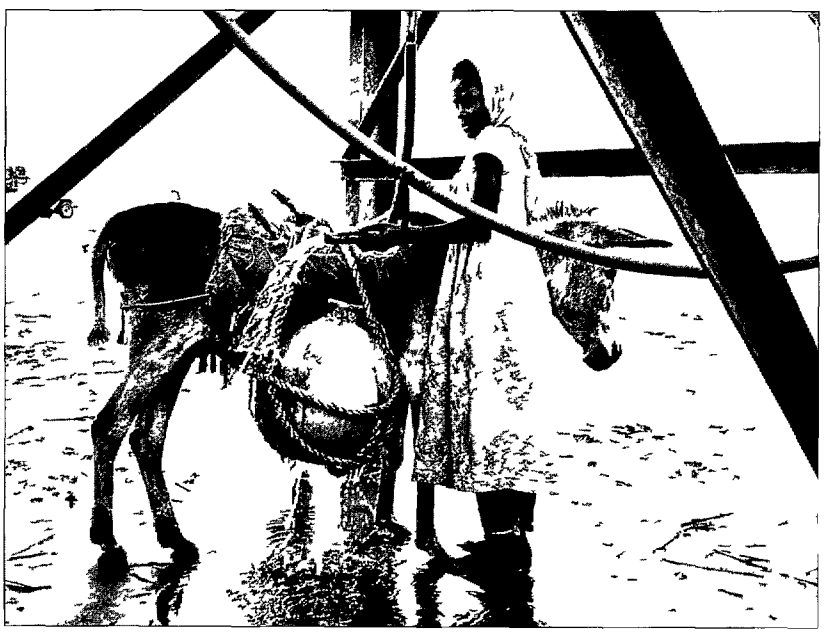
▶ Introduce mechanisms to reduce girls' workloads

A key component of a girl s household responsibilities is taking care of her younger siblings The demand for child care is acute in industrialized and industrializing countries alike Providing child care at parents work sites would reduce girls workloads and nutritional losses and would grant girls the time to pursue their education

Introducing appropriate labor saving household technology is also an important step toward reducing the heavy workloads of girls Piped water in or near the household for example would reduce girls time spent fetching water for daily needs Additionally where technology is not feasible shifting work burdens among family members and reallocating workloads should be encouraged

▶ Teach adolescents income-earning skills

Poverty is a vital factor in the health and nutritional status of adolescents Employment and vocational training programs to assist youths and their families participate in better paid income-generating activities with better working conditions can help address the poor nutritional status that is associated with poverty



Credit UNICEF Photo by Beyer

The ICRW survey of adolescent programs (Peplinsky 1994) found that while nearly 20 percent of respondents feel that unemployment is a major problem confronting adolescents who have finished school few programs focus on adolescent employment and income-generation activities Those that are successful have a number of common elements instilling a work ethic teaching the importance of punctuality and reliability teaching adolescents to have pride in their jobs and promoting non-traditional skills among young girls (see box) The provision of vocational skills training at youth clubs and multiservice centers offers an opportunity for a broad based approach combining skills training nutrition and health education and food supplementation

▶ Build partnerships with employers

Collaborating with and encouraging employers to improve hours and other conditions of work and to provide meals that improve both worker productivity and worker health could be an effective means of addressing adolescent girls nutritional status as well as their employment needs Local chambers of commerce and community business organizations could be helpful in developing employer interest in this strategy

Project Highlights:
The Nutrition of Adolescent Girls Research Program

Mexico
A continuation of a 25 year longitudinal study in a Puebla village by the Instituto Nacional de la Nutrición assessed the impact of childhood food supplementation on the physical mental and behavioral development of 70 adolescents The findings on cognitive development were particularly interesting Overall girls scored much lower on standardized tests than boys Also supplemented girls and boys scored higher than their unsupplemented counterparts For boys this difference was maintained throughout adolescence The cognitive development of supplemented girls however slowed considerably from age 15 and so sustained a much smaller improvement over the unsupplemented girls by the end of adolescence The researchers postulate that a social ceiling exists in the community whereby girls are not expected to have opinions think analytically or have extensive conversations with adults The social ceiling may also exist for boys but they have more interaction with adults The researchers suggest that efforts be made to ensure that young children have an adequate diet and health care To avoid the social ceiling long term changes are needed to increase the aspirations of adolescents and their parents for their future

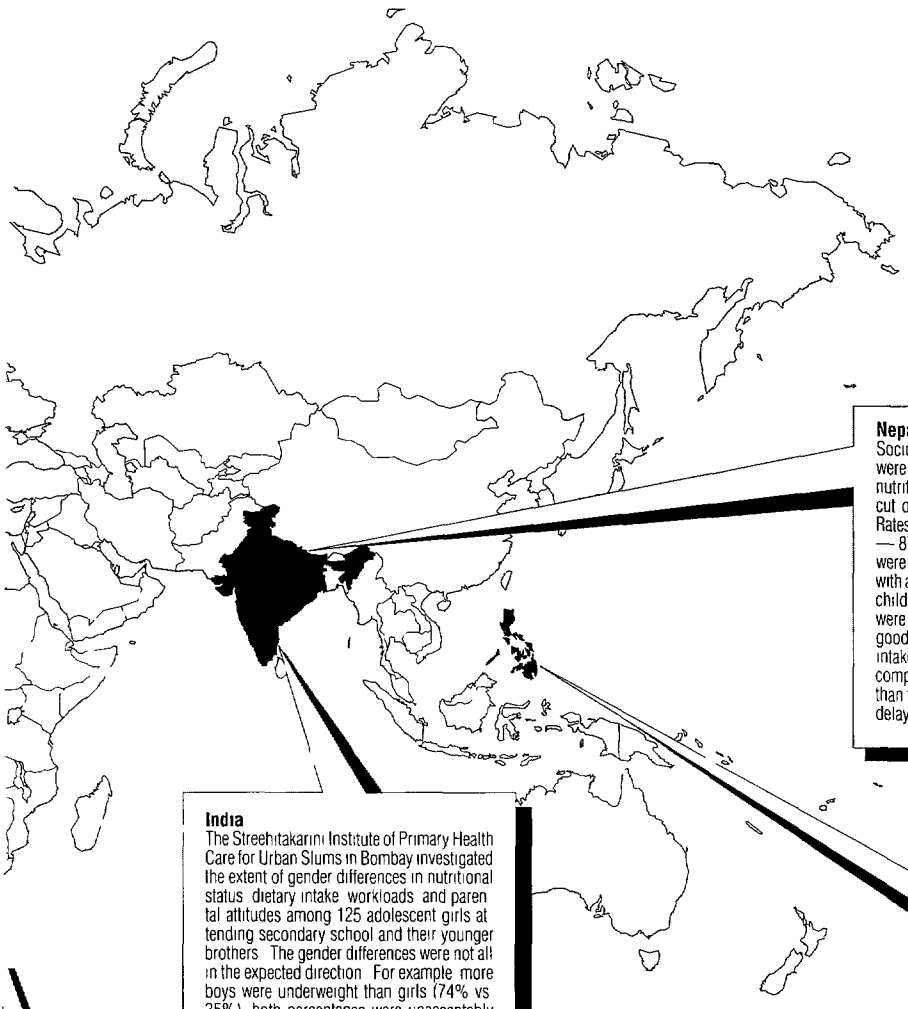
Jamaica
Researchers at the University of the West Indies investigated determinants of school achievement among 450 13 14 year old girls in inner city secondary schools in Kingston The girls had adequate weight and height The main nutritional problem was anemia (16) There were reports of hunger — 33 % went to bed hungry at least once a week Many girls were sexually active (20%) and exposure to violence was high School achievement and attendance were poor The factors explaining achievement were attendance anemia and involvement in fights Attendance in turn was explained by lack of school materials lack of reading stimulation at home chores before school and having had sex The researchers recommend that schools develop programs to reduce aggressive behavior that sex education and guidance counselling be improved and that school feeding programs and nutrition education could reduce hunger and anemia

Guatemala (metabolic study)
Twenty four undernourished girls from low to moderate income families received a substantial daily food supplementation at their secondary schools in Guatemala City The researchers at INCAP and UC Berkeley hypothesized that their physical growth could be promoted that is that some catch up growth was possible Every three months over 12 months exercise tests were conducted growth hormones were measured anthropometric and body composition tests were performed and morbidity dietary intake and activity patterns were assessed Despite the rigorous protocol girls participated fully and parents and teachers supported the study Girls were pleased with the attention they received and the prestige it accorded them at school Parents were also pleased with the attention given their daughters and also very interested that their children could grow taller Teachers reported that girls who participated in the study were more communicative and active Specific growth outcomes from the food supplementation are forthcoming

Guatemala (longitudinal study)
The investigators of this study at Emory University and INCAP hypothesize that catch up growth does not occur contrary to the other Guatemala study The sample included more than 800 girls and boys aged 15 23 who received food supplementation during early childhood as part of the INCAP Four Village study in the Eastern Highlands of Guatemala Growth during adolescence of individuals who received the high energy supplementation in early childhood was compared to those who received low energy supplementation Results are forthcoming

Ecuador
In a nationally representative sample of 2 000 adolescents researchers at CEISAN investigated nutritional status dietary practices and social and demographic characteristics They also conducted focus groups to learn more about adolescents future aspirations Underweight was found to be somewhat prevalent in Ecuador (6%) as was overweight (13%) More boys than girls were underweight (13% vs 4%) but there was little difference between urban and rural areas More girls than boys were overweight (13% vs 7%) More adolescents in urban areas were overweight than in rural areas (12 % vs 8%) Boys had higher rates of anemia than girls Regarding future aspirations younger boys wanted to help in the community while older boys wanted to do wage labor and play sports with their friends like their fathers Younger girls on the other hand wanted to take care of children and work at home like their mothers while older girls wanted to finish school and find employment Both boys and girls knew little about their bodies or their sexuality but had many questions and were eager to learn

Benin
CRE DE SA an action research institution investigated factors influencing the nutritional status of adolescent girls and boys and their mothers in four rural communities Overall there was a high prevalence of adolescent undernutrition in the communities (25% low weight) It was higher among the younger adolescents 10 14 years (up to 50% low weight) More school going adolescents were undernourished than non school going ones due to long walks to school and little food available All mothers wanted their sons to be educated but only educated mothers wanted their daughters to be Daughters of younger mothers were more likely to be better nourished than girls of older mothers perhaps because the younger mothers are better educated On the other hand the mothers themselves were 3 5 times more likely to be undernourished than mothers who were older Many of the young people were not enrolled in school (50 70%) especially the girls (up to 84%) Families place higher value on training in skills needed to meet families needs than on formal education Providing child care contributing small income earnings and doing domestic work contributes to adolescents social status CRE DE SA hopes to apply these insights to develop strategies to increase school attendance



Nepal
Socioeconomic and biological factors affecting the nutritional status of Nepalese adolescents were investigated in three rural villages by New ERA Kathmandu Both girls and boys had poor nutritional status They had low relative weight — 23% had Body Mass Index below the WHO cut off Rates of stunting varied from 25% to 85% depending on the village and age group Rates of iron deficiency anemia varied from 13% to 84% Iodine deficiency was also a problem — 87% of girls in one village had visible goiter Factors explaining the low weight and height were household literacy training economic status hygiene factors menarche less morbidity with acute respiratory infection and longer breast feeding and completed immunization as young children It was interesting that boys were better nourished than girls at 10 14 years but girls were better nourished than boys at 14 18 years For the older girls factors associated with good nutritional status were age related maturation delayed marriage and adequate energy intake An unexpected positive finding was that fewer girls were married during adolescence compared to the national average This was despite low education levels — girls attended less than two years of school and boys less than four The researchers recommend that reasons for delaying marriage be investigated and applied elsewhere in Nepal

India
The Streehitakarini Institute of Primary Health Care for Urban Slums in Bombay investigated the extent of gender differences in nutritional status dietary intake workloads and parental attitudes among 125 adolescent girls attending secondary school and their younger brothers The gender differences were not all in the expected direction For example more boys were underweight than girls (74% vs 35%) both percentages were unacceptably high There were no sizable differences in energy and protein intakes Anemia and low iron intake however were more common for girls than boys Girls did more domestic work than boys — fetching water washing clothes looking after siblings and sweeping and mopping the small homestead Parents preferred keeping boys in school longer than girls because they are expected to earn more income and support them in their old age In depth interviews revealed however considerable love and preference for their daughters They maintained contact and helped them settle into jobs and marriage

Philippines (Mindanao study)
In this project researchers at IFPRI University of the Philippines and RIMCU in Bukidnon Mindanao collected data to extend a 1984 household survey among 400 households Underweight was experienced by up to 30% of adolescents 12 19 years old depending on age and sex Stunting was experienced by 50 90% Children from low income households are shorter until early adolescence (girls until age 12 and boys until 15) but catch up to their taller counterparts from high income households by age 19 Food was found to be proportionally distributed among household members Parents expressed repugnance when asked whether males should be entitled to better food than females or that family members who earn more should be entitled to better food Girls stay in school somewhat longer than boys Boys who have more opportunities for social interaction outside of school tended to drop out of their own accord usually to the disappointment of their parents When parents from poor households cannot afford to send their children to school until graduation they will send children who express the strongest desire to go and who have the highest achievement scores The researchers suggest that policies to increase household incomes will do much to improve the general welfare and nutrition of adolescents and that economists should begin to investigate the impact of policies on this age group

Philippines (Cebu and Vigan study)
The nutritional status of adolescent girls and boys in Cebu and Vigan was investigated by researchers at the University of the Philippines with special attention to potential psychological and social influences The prevalence of underweight was modest (13 %) but many were stunted (43%) Another potential nutritional problem was low iron intake (as low as 45% of the recommended intake among Cebu girls) Ethnic group and sex explained much of the variation in nutritional status Other explanatory factors include socioeconomic status age sibling position nutrition knowledge and practice amount of conversation during meal time and amount of parents attention to child s health Social and family factors were more important for adolescents nutritional status than were psychological variables such as self esteem and body image

Cameroon
Researchers at Centre de Nutrition Yaoundé and ICRW investigated the nutritional health and socioeconomic status and assessed self e teem among 460 Cameroonian girls and boys 12 19 years old from urban and rural areas in the Forest and Sahel zones The prevalence of underweight was low (4%) and that of stunting was only somewhat higher (12%) The prevalence of anemia also was not high To assess the self esteem of adolescents an instrument was developed over a three month span Adolescents participated in focus groups where they listed characteristics of themselves and others their age The list was refined using other qualitative research techniques From this a questionnaire was developed with 40 characteristics that adolescents first rated as good bad or neutral Then they rated how well these characteristics applied to themselves (a lot a little not at all) The two sets of ratings were combined and a self esteem score was calculated Scores indicated that self esteem of the adolescents is average

Principle 5: Improve Adolescents' Health for Better Nutritional Status

Adolescence provides an important opportunity for health promotion and disease prevention (Carnegie Council on Adolescent Development 1993) There are three ways in which disease, particularly infectious and parasitic disease can compromise adolescents nutritional status (see Diagram) First, disease can suppress appetite (Latham et al 1990) Parasitic disease if left untreated can infect individuals for several years Prolonged appetite suppression and reduced food intake comprise a major nutritional loss for the infected individual

Summer Camps for Health Education

The health of adolescent girls is often compromised by social and cultural norms which restrict girls activities and interactions thus limiting their access to critical health information and care Using an innovative educational approach the Center for Health Education Training and Nutrition Awareness (CHETNA) in India organized a Yuvati Shibir — a camp for adolescent girls The five day camp was designed to impart health information to provide opportunities for girls to discuss issues of concern and experiences with each other to foster community spirit and to raise girls self esteem Girls were selected from rural and urban slum communities of the Gujarat state of India More than 100 girls were brought together for the project

Participants were invited through organizations already working with adolescents in the Gujarat state Rural girls are not generally permitted to go anywhere alone due to concerns about their safety and chastity In order to ensure the girls participation in the Yuvati Shibir CHETNA invited female representatives from each organization to accompany the girls This was also planned to strengthen follow up activities

During the camp a number of ice breaking activities games and fairs were integrated with sessions and workshops where critical issues were discussed such as dowry discrimination against girls and abuse in marriage In order to provide girls with much needed reproductive health information CHETNA distributed a Child Birth Picture Book a CHETNA publication The book drew mixed reactions from the girls as a result of strong sociocultural taboos and restrictions about sexual activity Many girls feared harsh consequences from their families for reading and possessing such information To resolve this dilemma the girls devised a solution whereby organization leaders and coordinators would retain the book at a location where girls could easily access it upon request thus lifting the burden of possessing such a book at home

Understanding the prevailing norms and beliefs of the larger society was a vital factor in the success of the Yuvati Shibir Educating within the cultural context is vital for program sustainability The cultural programme of celebration in Yuvati Shibir ended in grand style culminating in hours of entertainment consisting of traditional dances fold songs and drama performed in ethnic dress Many of the girls left with an experience they would not soon forget and with vital information they planned to share with others upon their return home

Source CHETNA 1991 *We Can Because We Think We Can.* Gujarat India

Secondly infectious and parasitic diseases can cause actual blood and iron loss which can lead to anemia (Stephenson et al 1989) Malaria and hookworm infections and schistosomiasis are three typical diseases that contribute to such losses Finally the fever that accompanies many infections forces the body to expend more calories which if sustained over a long time depletes energy stores and can lead to undernutrition Treatment of these diseases contributes to better nutritional status Prevention of these diseases offers even greater protection of nutritional status

Addressing adolescents behaviors that pose risks to health such as smoking drug and alcohol abuse and unprotected sexual intercourse is also important for protecting adolescent nutritional status Tobacco drugs and alcohol have all been shown to suppress appetite Alcohol consumption may also replace the consumption of nutritious food Unprotected sexual intercourse, common among the increasing number of sexually active adolescents not only carries the risk of HIV infection but may also result in early pregnancy which as described in an earlier section compromises nutritional status by limiting girls growth, increasing nutritional requirements to support the fetus and adding to the risk of hemorrhage

STRATEGIES

▶ Inform and educate adolescents about their health

Adolescents need to have health education and access to health care services They need information on health and nutrition that helps to explain normal and abnormal periods of growth, illness and behavior and they need to be informed about the services available to them for treatment and prevention Improving adolescents awareness of health and disease through health education campaigns is an initial step Adolescents respond effectively to messages taught within the youth culture, using modes of communication popular among them such as music and television Role playing and the use of drama especially when they involve the adolescents themselves are creative means to transmit health information Summer camps and health fairs which integrate education and recreation have also shown positive results (see box)

▶ Design and provide health services for adolescents

Adolescents use facilities that have services or outreach addressing their needs but tend not to use those services designed only for adults Adolescents need access to low-cost health care services Affordable clinics established in schools or youth clubs can offer adolescents both the access and the low-cost services they require Services for adolescents must also assure privacy and confidentiality Care must be provided at flexible hours which do not conflict with school or work times Finally, general approval from parents and community leaders helps sustain program success

▶ Develop effective communication strategies for adolescents

Health care professionals family members, and the community at large need to be sensitized to the issues and concerns of adolescents Health care workers should be trained in effective communications skills tailored to adolescents Simple honest and direct communication techniques have been shown to be most effective with younger populations Services designed with adolescents in mind, which provide outreach support and privacy, will be more successful in addressing health needs than traditional health care facilities intended for an adult population

Principle 6: Enhance Girls' Self-Esteem to Encourage Nutritional Status

There is evidence from developing countries that a short-term benefit of education is improved self-esteem (Caldwell 1979) which in turn contributes to other longer-term benefits of education For girls, these include delays in first births improved income-earning potential, and better health -- all of which can lead to better nutritional status Thus enhancement of self-esteem during the critical psychosocial development period of adolescence would appear to be at least indirectly related to improvements in girls nutritional status

A more direct linkage between self esteem and nutritional status may also exist Such a potential linkage has not to date been well explored The impact of self-esteem or lack thereof on nutritional status has been established only in studies of anorexia nervosa or bulimia in the United States Similar studies have not been conducted in the developing countries and broader investigations of self-concept and nutritional status have not been undertaken at all Nonetheless, there is intuitive appeal to the notion that girls who value themselves and believe that they have viable options for leading productive and happy lives may make better food choices (assuming of course, sufficient income and other conditions that allow for such choices)

Empowering Girls Through Self Esteem

Improving the health practices of young street girls often begins not with the actual provision of health care services but reestablishing their sense of self esteem and self sufficiency As Ana Vasconcelos Director and Founder of Casa de Passagem (Passage House) discov ered in order to empower adolescents to care for their own well being they must first feel confident and able to do so For street girls in Recife Brazil where infection rates for sexually transmitted diseases and HIV are on the rise self esteem is a necessary tool for successful preven tive health care

Adolescent girls who live on the streets in and around Recife are often the victims of poverty and both physical and sexual abuse Such abuse not only carries with it the physical scars of STDs HIV infection and/or adolescent pregnancy but also the disruption of a girl s sense of self worth In their efforts to improve the lives of street girls Casa de Passagem staff have incorporated psychosocial and mental health services into their program By offering counseling and psychological support Casa de Passagem has helped street girls improve their self image and take control of their health Particularly successful strategies include group discussions which provide and opportunity for girls to share concerns and exchange information in a non threatening envi ronment In addition Casa de Passagem helps to develop self sufficiency by allowing the girls to establish their own house rules and by offering vocational training and assistance in finding employment A fundamental key for success is Casa de Passagem s efforts to reach girls on their own terms

Once empowered and confident of their own abilities may girls begin the transition away from street life For girls who cannot return home Casa de Passagem offers community residential housing

A multifaceted approach to the problems faced by adolescents on the street and an emphasis on attitudinal and behavioral change have made Casa de Passagem a successful and long standing program for young girls

Source Barker Gary and Felicia Knaul 1992 *Three Times Exploited Three Times Empowered The Urban Adolescent Women in Difficult Circumstances* New York UNICEF Urban Section

STRATEGIES

▶ Increase knowledge and skills

The strong relationship between self-esteem and educational attainment calls for a focus on keeping girls in school As Jon Rohde (1990) points out, girls school attendance helps build self-esteem through public recognition of their competence gained through scholastic achievement The education girls receive, coupled with their social contacts and perceived status as school attendees, has a positive impact on their health and nutritional status

▶ Provide opportunities for achievement

Engaging adolescents in recreational activities or productive projects treating them with respect and rewarding their accomplishments can enhance their self esteem by providing them with a sense of achievement and confidence in their own abilities and skills Examples include programs that incorporate sports and academic competitions or internships within the business community Several health and nutrition education programs for example have awarded adolescents certificates or degrees at the end of the program to demonstrate their new-found knowledge This not only enhances self esteem but also develops adolescents sense of responsibility to care for their own health and well being

▶ Increase girls' awareness of opportunities for the future

Girls sense of self-worth can be enhanced not only by short term achievement but through the development of their aspirations and goals for the future Life options should be discussed with girls and they should be assisted with the development of decision-making skills that will help them pursue their dreams Introducing girls to positive role models through the media or discussions of women s leadership roles, or by inviting community leaders to address youths in schools and clubs can encourage girls to broaden their horizons and can contribute to their sense of value within society

▶ Establish means for communication

A number of programs have begun to address the psychosocial and mental health needs of adolescents through the provision of counseling services sometimes through multiservice youth centers (see box) These services can contribute to improved self esteem by providing forums for open communication among adolescents and counsellors who are sensitized to their needs In many cases peer counseling has been used effec tively through telephone crisis hotlines staffed by adolescent volunteers for example Communication with parents is also very important and should be encouraged in similar ways

Credit UN Photo 154321/Gayle Jann

Conclusions

During the developmental phase of adolescence an important opportunity exists to improve nutritional status and health over the long-term, especially among adolescent girls Interventions designed to achieve this goal must recognize that nutritional status represents a balance between food intake and energy expenditures both of which are impacted by a variety of socio-economic factors In summary we have set forth the following principles and strategies to improve the nutritional status of adolescent girls in developing countries While these strategies are program-oriented they can provide policymakers a road map to the important issues in adolescent nutrition

PRINCIPLE 1 IMPROVE ADOLESCENTS' FOOD INTAKE

Strategies

- Increase household purchasing power
- Educate adolescents about nutrition
- Offer meals at schools or worksites
- Offer iron fortification or supplementation
- Discourage gender differences in food intake

PRINCIPLE 2 KEEP GIRLS IN SCHOOL

Strategies

- Ensure girls safety and privacy at school
- Establish schools close to home
- Increase the proportion of female teachers
- Make school hours more flexible
- Offer an alternative to formal education
- Integrate food supplementation into school systems

PRINCIPLE 3 POSTPONE FIRST BIRTHS

Strategies

- Postpone age at marriage
- Offer appropriate family planning and reproductive health services for adolescents
- Provide family life education and life options
- Increase educational attainment for girls

PRINCIPLE 4 REDUCE GIRLS' WORKLOADS AND IMPROVE WORK CONDITIONS

Strategies

- Introduce mechanisms to reduce girls' workloads
- Teach adolescents income-earning skills
- Build partnerships with employers

PRINCIPLE 5 IMPROVE ADOLESCENTS' HEALTH

Strategies

- Inform and educate adolescents about their health
- Design and provide health services for adolescents
- Develop effective communication strategies for adolescents

PRINCIPLE 6 ENHANCE GIRLS' SELF ESTEEM

Strategies

- Increase knowledge and skills
- Provide opportunities for achievement
- Increase girls awareness of opportunities for the future
- Establish means for communication

In addition to the specific strategies outlined under the six principles discussed in this document, respondents to the ICRW survey of adolescent programs consistently identified additional strategies that cut across the various principles for improving adolescents lives and well-being and contribute to program sustainability

- Broaden the scope of programs for adolescents Although the number of programs targeting adolescents is on the rise the vast majority of adolescent and youth programs are both new and operating on a small scale In addition, many of the programs focus on issues of reproductive health Few recognize the importance of nutrition for adolescent health and well-being Much more needs to be done to evaluate the strategies and effectiveness of existing youth programs to learn how to broaden their scope, address more of adolescents concerns and reach greater numbers
- Involve adolescents in all stages of program development in order to enhance program sustainability and to ensure that their needs and concerns are being met
- Train staff to be sensitive to and respectful of adolescents in order to establish a sense of trust that will contribute to program success
- Recognize the significance of peer groups to adolescents and make use of youth-to-youth forms of communication and counseling through such mechanisms as peer counseling and media messages conveyed in popular style and language
- Sensitize the larger community especially parents teachers and health care providers to the needs of adolescents and their specific physiological and social concerns
- Use popular culture to reach adolescents on their own terms such as through film video comic books music and drama
- Recognize that confidentiality and privacy are among the primary concerns of adolescents which must be taken into account when designing programs and services targeting adolescents

Resources

SELECTED PROGRAMS WORKING WITH ADOLESCENTS

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The Nutrition of Adolescent Girls Research Program

This document is part of ICRW's Nutrition of Adolescent Girls Research Program established in 1990 through a cooperative agreement with the Office of Nutrition, USAID. The program aims at providing needed information on the many factors that affect and are affected by nutritional status, including physical growth, morbidity, food intake, energy expenditure, and self-esteem. The program includes 11 research projects, five in Latin America and the Caribbean, four in Asia, and two in Africa. Research reports from the projects and a synthesis paper of program findings will be available through ICRW in 1994.

About the International Center for Research on Women

The International Center for Research on Women (ICRW) is a private, nonprofit organization dedicated to promoting social and economic development with women's full participation. Established in 1976, ICRW examines women's economic health and social conditions in developing countries from an integrated perspective that considers their dual productive and reproductive functions, is grounded in the generation of high-quality empirical information, and draws attention to women's participation in and critical contribution to development and the environment. Working with policymakers, practitioners, and researchers throughout Asia, Africa, and Latin America, ICRW helps influence policy and action through its research, technical support and analysis, and communications programs. Grants, contracts, and contributions from international and national development agencies, foundations, corporations, and individuals support ICRW's work.

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